

**SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY)  
EXAMINATION, APRIL 2022**

(CBCSS)

Aquaculture and Fishery Microbiology

AFM 2C 08—RESEARCH METHODOLOGY

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

**General Instructions**

1. *In cases where choices are provided, students can attend all questions in each section.*
  2. *The minimum number of questions to be attended from the Section/Part shall remain the same.*
  3. *The instruction if any, to attend a minimum number of questions from each sub section/sub part/sub division may be ignored.*
  4. *There will be an overall ceiling for each Section/Part that is equivalent to the maximum weightage of the Section/Part.*
- I. Write short answers to the following. Answer any *four* questions. Each question carries 2 weightage :
- 1 Comment on objectives of Research.
  - 2 Distinguish between diagnostic and descriptive research.
  - 3 Impact factor.
  - 4 Primary Data.
  - 5 Reprints.
  - 6 Null and alternative hypothesis.
  - 7 Citation index.

(4 × 2 = 8 weightage)

II. Write short essay to the following. Answer any *four* questions. Each question carries 3 weightage :

8 Comment on data collection methods.

9 Comment on on-line journals.

10 Explain role of ethics in research.

11 Briefly mention the role of author, guide and co-author in publication of research articles.

12 Comment on measures of relationship :

13 Write notes on software for data analysis.

14 Describe the techniques involved in defining a research problem.

(4 × 3 = 12 weightage)

III. Write short essay to the following. Answer any *two* questions. Each question carries 5 weightage :

15 Briefly describe the important parametric test used in context of testing hypothesis.

16 Explain methods of collecting primary and secondary data.

17 Describe the different steps involved in a research process.

18 Explain the significance of research report and narrate the various steps involved in writing a research report.

(2 × 5 = 10 weightage)

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Aquaculture and Fishery Microbiology

AFM 2C 07—FISH BIOCHEMISTRY

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

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**Section A**

- I. Write short answers to the following. Answer any *four* questions. Each question carries 2 weightage :

- |                    |                       |
|--------------------|-----------------------|
| 1 Sterioisomerism. | 2 K-value.            |
| 3 FPH.             | 4 Synzymes.           |
| 5 Turnover number. | 6 Lipopolysaccharide. |
| 7 Myogen.          |                       |

(4 × 2 = 8 weightage)

**Section B**

- II. Write short essay to the following. Answer any *four* questions. Each question carries 3 weightage :

- 8 Define Km and explain the effect of substrate concentration on enzyme activity.
- 9 Chemical composition of crustaceans and molluscs.

**Turn over**

- 10 Biochemical changes in fish muscle during rigor mortis.
- 11 Comment on the non-protein nitrogenous compounds in fishes.
- 12 What is TMAO and how is it produced ?
- 13 Factors influencing water holding capacity of proteins.
- 14 Why are enzymes used in food processing ?

(4 × 3 = 12 weightage)

### Section C

III. Write short essay to the following. Answer any *two* questions. Each question carries 5 weightage :

- 15 Explain the features of different classes of lipids with examples.
- 16 Explain the mechanism of enzyme activity.
- 17 Give an account of the functional properties of seafood proteins.
- 18 Polysaccharides, classification and their importance.

(2 × 5 = 10 weightage)

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Aquaculture and Fishery Microbiology

AFM 2C 06—SEED PRODUCTION AND HATCHERY MANAGEMENT

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

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**Part A**

- I. Write short answers to the following. Answer any *four* questions. Each question carries 2 weightage :

- 1 Post larvae.
- 2 Nauplius.
- 3 Stripping.
- 4 Dry Bundh.
- 5 Mussels.
- 6 Hatchery ponds.
- 7 Live feeds.

(4 × 2 = 8 weightage)

**Turn over**

**Part B**

II. Write short essay to the following. Answer any *four* questions. Each question carries 3 weightage :

- 8 Chinese circular hatchery.
- 9 Eye stalk ablation in prawn.
- 10 Comment on induced breeding in prawns.
- 11 Methods of spat collection.
- 12 Seed production techniques of lobster.
- 13 Comment on zooplankton culture.
- 14 Hatchery rearing of edible oysters.

(4 × 3 = 12 weightage)

**Part C**

III. Write short essay to the following. Answer any *two* questions. Each question carries 5 weightage :

- 15 Write an essay on marine fish seed production in India.
- 16 Explain Artemia production techniques.
- 17 Briefly explain seed production techniques in cat fishes.
- 18 Explain the seed production techniques of Cobia.

(2 × 5 = 10 weightage)

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Aquaculture and Fishery Microbiology

AFM 2C 05—FISHERY MICROBIOLOGY

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

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  3. *The instruction if any, to attend a minimum number of questions from each sub section / sub part / sub division may be ignored.*
  4. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*
- I. Write short answers to the following. Answer any *four* questions. Each question carries 2 weightage :

- 1 E<sup>h</sup>.
- 2 Aflatoxin.
- 3 FSIS.
- 4 Coliforms.
- 5 XLDA.
- 6 Catalase test.
- 7 Saccharolytic bacteria.

(4 × 2 = 8 weightage)

Turn over

II. Write short essay to the following. Answer any *four* questions. Each question carries 3 weightage :

- 8 Isolation of Salmonella.
- 9 Fermented fish products.
- 10 Food infection.
- 11 *Aeromonas hydrophila*.
- 12 Food poisoning by *Staphylococcus aureus*.
- 13 Chilling and freezing as food preservation techniques.
- 14 MBRT.

(4 × 3 = 12 weightage)

III. Write short essay to the following. Answer any *two* questions. Each question carries 5 weightage :

- 15 Microbiological standards for fish and fishery products.
- 16 Explain water activity, acidity and nutrients as important factors for microbial growth.
- 17 Give an account on Microbiological spoilage of fish and fish products.
- 18 Listeria - Importance, Isolation and Identification.

(2 × 5 = 10 weightage)